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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BOYCE, ANDRE D	
ART UNIT	PAPER NUMBER
3623	
MAIL DATE	DELIVERY MODE
08/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/829,405	INMAN ET AL.	
	Examiner	Art Unit	
	Andre Boyce	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-13,15-21,23-29,31-37 and 39-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-13,15-21,23-29,31-37 and 39-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Non-Final office action is in response to Applicant's amendment filed April 6, 2009. Claims 1, 9, 17, 25, 37, 39 and 40 have been amended. Claim 38 has been canceled, and claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are pending.

2. The previously pending objections to claims 38 and 39 have been withdrawn.

The previously pending rejections to claims 1-5, 7, 8, 33 and 38 under 35 USC § 101 have been withdrawn.

3. Applicant's arguments filed April 6, 2009 with respect to the 35 USC §101 rejection for independent claims 37 and 40 have been fully considered but are not persuasive.

Applicant's arguments with respect to claims 1, 9, 17 and 25 have been considered but are moot in view of the new ground(s) of rejection, necessitated by Applicant's amendments to the claims.

Applicant's arguments with respect to claims 37 and 40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5, 13, 21, 29 and 40-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5, 13, 21 and 29 recite the limitation "up and down shifting between levels of different precision." There is insufficient antecedent basis for this limitation in the claim.

Claim 40 is rejected as being vague and indefinite for use of the phrase " relative similarity to the base level variable." It is unclear what "relative similarity" includes or does not include. Clarification is required. Claims 41 and 42 are rejected as dependent claims.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 37, 39 and 40-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In order for a method to be considered a "process" under §101, a claimed process must either: (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008). If neither of these requirements is met by the claim, the method is not a patent eligible process under §101 and is non-statutory subject matter.

With respect to independent claims 37 and 40, the claim language recites a computer implemented method, including receiving, in a computer system, a base level data set, defining a first segmentation tree; receiving, in the computer system, an alternate (level) data set, etc., however receiving data into a computer system is considered a nominal tie and insignificant extra solution activity that does not satisfy the requirement, since there is no indication that anything is done with the received data.

Claims 39, 41, and 42 are rejected based upon the same rationale, wherein the claim language does not include the required tie or transformation.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (US 2002/0184077), in view of Christiansen et al (USPN 6,202,053).

As per claim 1, Miller et al disclose a method for segmenting a population (i.e., segmentation system for classifying households into market segments, ¶ 0017), comprising: defining a base level population segmentation tree having a base precision with a base segmentation tree defining module (i.e., population at node 1, figure 3 and partitioning module 510, figure 5, ¶ 0021); defining a set of alternative level variables with an alternative level variable defining module (i.e., partitioning

module 510, figure 5), the set of alternative level variables useable as substitutes in the nodes of the population segmentation tree to create a substitute level tree (i.e., populations split according to a plurality of decisions, ¶ 0021); determining, with a substitute split value determining module (i.e., partitioning module 510, figure 5), substitute split values for each node of the substitute level tree to enable up and down shifting (i.e., splits based upon a different decision, ¶ 0022), the substitute split value determining module to calculate the substitute split values that maintain a percentage split value of the substitute level tree that is equal to a percentage split value of the base level population segmentation tree (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting the substitute level tree having the substitute split values to a user (i.e., split views area of display, including all splits made as <= value versus > value, ¶ 0057).

Miller does not explicitly disclose a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision. Christiansen et al disclose a breakdown of defined sub-populations (i.e., substitute precision different from the base precision, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., up and down shifting between levels of the base precision and the substitute precision, column 4, lines 17-24). It would have been obvious to one having ordinary skill in the art to include a substitute level tree having a substitute precision

different from the base precision, and up and down shifting between levels of the base precision and the substitute precision in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claims 2-4, Miller et al does not explicitly disclose determining whether a level shift is required, determining segments using the base level tree when no level shift is required, and determining segments using another level when a level shift is required. Christiansen et al disclose in order to test the validity of the defined sub-populations, a representative sample of past applicants were re-scored with the new methodology and compared with their actual credit history (column 4, lines 25-28), wherein based upon on a specific attribute a group was further segmented (column 4, lines 62-67). In addition, a scorecard for sub-populations is developed taking into account the likelihood an account would ever be 90 days or more past due, wherein the scorecards are developed using the criteria validated with the sample population, wherein the sample population is analyzed using the newly created scorecards (column 5, lines 25-45). It would have been obvious to one having ordinary skill in the art to include segmentation validity testing and level shifting in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the

same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 5, Miller et al disclose determining at least one segment using the substitute level tree (i.e., terminal nodes 4, 5, 8, 10-13, figure 4).

As per claim 7, Miller et al disclose the split values are for income and age (¶ 0005).

As per claim 8, Miller et al disclose verifying the results of a segment determination when using substitute values (i.e., optimization of the segmentation, ¶ 0046).

As per claim 33, Miller et al disclose wherein the base level population segmentation tree is based on at least one of demographic data or behavioral data for a set of consumers (i.e., generating a plurality of classification trees based on demographic and behavioral data, ¶ 0018);

Claims 9-13, 15-16 and 34 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the system claims corresponding to the method claims.

Claims 17-21, 23-24 and 35 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software system claims corresponding to the method claims.

Claims 25-29, 31-32 and 36 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software product claims corresponding to the method claims.

As per claim 37, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017) comprising: receiving, in a computer system, a base level data set having a first precision (i.e., data set of figure 3 including a population at node 1 split based on decision 1 into nodes 2 and 3); defining a first segmentation tree in accordance with the base level data set, the first segmentation tree comprising a plurality of base level variables, each variable associated with a base level node and having a corresponding base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); receiving, in the computer system, an alternate data set (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); defining a plurality of alternate level variables, each alternate level variable associated with an alternate level node and having a corresponding alternate level value (i.e., nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement), and defining a second segmentation tree in accordance with the alternate data set (figure 4).

Miller does not explicitly disclose receiving, in the computer system, an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population. Christiansen et al disclose a breakdown of defined sub-populations (i.e., an alternate data set having a second precision

different from the first precision of the base level data set, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables, column 4, lines 17-24). It would have been obvious to one having ordinary skill in the art to include an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 39, Miller et al disclose calculating the corresponding alternate level value to maintain a similar percentage split between the base level node and the alternate level node (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5).

As per claim 40, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017)

comprising: receiving, in a computer system, a base level data set having a first precision; defining a segmentation tree in accordance with the base level data set (i.e., data set of figure 3 including a population at node 1 split based on decision 1 into nodes 2 and 3), the segmentation tree having a plurality of decision nodes, each comprising a base level variable and a base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); calculating a percentage split for each of the plurality of decision nodes of the segmentation tree, wherein the percentage split is calculated at the corresponding base level value for the corresponding base level variable (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5); receiving, in the computer system, an alternate level data set; selecting an alternate level variable from the alternate level data set for each of the plurality of decision nodes of the segmentation tree (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); and calculating an alternate level value of the alternate level variable for each of the plurality of decision nodes, where the alternate level value is calculated to maintain the percentage split for each of the plurality of corresponding decision nodes (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting an alternate level segmentation tree to a user, the alternate level segmentation tree representative of the population associated with the alternate level data set (i.e., split views area of display, including all splits made as <= value versus > value, ¶ 0057).

Miller does not explicitly disclose receiving, in the computer system, an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable. Christiansen et al disclose a breakdown of defined sub-populations (i.e., an alternate data set having a second precision different from the first precision of the base level data set, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., the alternate level variable selected in association with a relative similarity to the base level variable, column 4, lines 17-24). It would have been obvious to one having ordinary skill in the art to include an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 41, Miller et al disclose upshifting from the base level data set to the alternate level data set when the alternate level data set is more precise than the base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

As per claim 42, Miller et al disclose downshifting from the base level data set to the alternate level data set when the alternate level data set is less precise than the

base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

Response to Arguments

10. In the Remarks, Applicant argues, with respect to the 35 USC §101 rejection, that claim 37 transforms data representative of the population as the second segmentation tree, which is fairly construed as a physical object in view of Bilski. Accordingly, claim 37 is statutory because it has a transformative effect on data representative of physical objects. In addition, Applicant argues independent claim 40 transforms data representative of the population as the alternate level segmentation tree, which is fairly construed as a physical object because it is representative of the population. The Examiner respectfully disagrees. These data sets Applicant refers to are not analogous to the X-ray attenuation data discussed in *In Re Abele*, 684 F.2d 902 (C.C.P.A. 1982), as cited by *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008), wherein the "…data clearly represented physical and tangible objects, namely the structure of bones, organs, and other body tissues." As a result, Applicant's claims do not satisfy the transformation prong of the machine-or-transformation test.

With respect to independent claims 1, 9, 17 and 25, Applicant's arguments are moot in view of the new grounds of rejection. However, the Examiner respectfully disagrees with Applicant's argument that Miller fails to teach or suggest maintaining

any relationship between those trees, much less maintaining a percentage split value of the substitute level tree equal to a percentage split value of the base level population segmentation tree. Miller et al disclose nodes 2 and 3 represent a equal percentage split using the same population node 1, wherein each of the same decisions 1-6 are applied to the population in both figure 4 and 5, thus indeed maintaining a percentage split value of the substitute level tree equal to a percentage split value of the base level population segmentation tree.

With respect to independent claims 37 and 40, Applicant's arguments are moot in view of the new grounds of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571)272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andre Boyce/
Primary Examiner, Art Unit 3623
August 1, 2009